

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**APPEAL BRIEF**

Applicant:	Bailey, <i>et al.</i>	Docket No.:	ROC920030220US1
Serial No.:	10/624,808	Group Art Unit:	2188
Filed:	07/22/03	Examiner:	DOAN, DUC T.
TITLE:	AUTONOMICALLY SUSPENDING AND RESUMING LOGICAL PARTITIONS WHEN I/O RECONFIGURATION IS REQUIRED		

Mail Stop APPEAL BRIEF - PATENTS  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir/Madam:

This appeal is taken from the Examiner's final rejection, set forth in the Office Action dated 05/08/08, of appellant's claims 9 and 23. Appellant's Notice of Appeal under 37 C.F.R. § 1.191 was filed on 06/23/2008.

**REAL PARTY IN INTEREST**

International Business Machines Corporation is the Real Party in Interest.

**RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences for this patent application.

## **STATUS OF CLAIMS**

Claims 1-21 were originally filed in this patent application. In response to the first office action dated 8/30/2005, appellant filed an amendment on 11/30/2005 that cancelled claims 12, 13, 17, 18, 20 and 21 and amended claims 1, 4-6, 9-11, 16 and 19. In response to the second office action dated 02/06/2006, an RCE and Amendment were filed on 05/04/2006. In response to the third office action dated 07/12/2006, an amendment was filed on 10/11/2006 that amended claims 1, 4-6, 9-11, 16 and 19. In response to the fourth office action dated 12/04/2006, an RCE and Amendment were filed on 03/02/2007 that cancelled claims 2-3, 7-8, and 14-15. In response to the fifth office action dated 03/27/2007 an amendment was filed 06/27/2007 that cancelled claims 1, 6, and 11 and claims 22-24 were added. In response to the sixth office action, an amendment was filed on 9/17/2007 that amended claims 23 and 24. An RCE was filed on 10/16/2007. In response to the seventh office action dated 12/26/2007, an amendment was filed on 03/26/2008 that amended claims 9 and 23, and cancelled claims 4-5, 10, 16, 19, 22, and 24. In the pending final office action claims, 9 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication 2003/0084030 to Day *et al.* (hereinafter "Day") in view of U.S. Patent Application Publication 2002/0112102 to Tarui *et al.* (hereinafter "Tarui"), and further in view of U.S. Patent Application Publication 2003/0163641 to Kaneko. No claim was allowed. Claims 9 and 23 are currently pending, and are at issue in this appeal.

## **STATUS OF AMENDMENTS**

The amendment filed 11/30/2005 has been entered. The amendment filed on 05/04/2006 has been entered. The amendment filed on 10/11/2006 has been entered. The amendment filed on 03/02/2007 has been entered. The amendment filed on 06/27/2007 has been entered. The amendment filed on 9/17/2007 has been entered. The amendment filed on 03/26/2008 has been entered. Therefore, the claims at issue in this appeal are claims 9 and 23 as amended in the amendment filed 03/26/2008.

## **SUMMARY OF CLAIMED SUBJECT MATTER**

Claim 9 recites a computer-implemented method for reconfiguring an identified Input/Output (I/O) resource in a computer system that includes a plurality of logical partitions (125A – 125 N in FIG. 1; p. 5 lines 22-23) managed by a partition manager executing separately from the plurality of logical partitions (121 in FIG. 1; p. 5 line 21), the plurality of logical partitions comprising at least one logical partition that owns the identified I/O resource and at least one logical partition that does not own the identified I/O resource (contrast step 630 in FIG. 6 and step 740 in FIG. 7; p. 10 lines 15-16; p. 10 line 21 – p. 11 line 3), the method comprising the steps of (1) the partition manager detecting a hardware state in the computer system that requires reconfiguration of the identified I/O resource (step 510 in FIG. 5; p. 10 lines 7-9); (2) the partition manager suspending all of the plurality of logical partitions by inhibiting dispatch of tasks to all of the plurality of logical partitions and waiting until all pending tasks in all of the plurality of logical partitions are complete (step 630 in FIG. 6; p. 10 lines 15-18); (3) the partition manager reconfiguring the identified I/O resource (step 640 in FIG. 6; p. 10 line 18); and (4) the partition manager resuming all of the plurality of logical partitions by enabling dispatch of tasks to all of the plurality of logical partitions (step 660 in FIG. 6; p. 10 lines 19-20).

Claim 23 recites a computer-implemented method for rebalancing an Input/Output (I/O) loop in a computer system that includes a plurality of logical partitions managed by a partition manager executing separately from the plurality of logical partitions, the method comprising the steps of (1) detecting when the I/O loop is unbalanced (step 810 in FIG. 8; p. 11 lines 13-14); (2) quiescing I/O resources in the I/O loop (step 820 in FIG. 8; p. 12 line 3); (3) determining which of the plurality of logical partitions own the I/O resources in the I/O loop (step 830 in FIG. 8; p. 12 lines 3-4); (4) suspending the logical partitions determined in step (3) (step 840 in FIG. 8; p. 12 lines 4-5); (5) rebalancing the I/O loop by allocating at least one I/O resource in the I/O loop from a first logical

partition to a second logical partition (step 850 in FIG. 8; p. 12 lines 5-7); (6) enabling the I/O resources in the I/O loop after rebalancing in step (5) (step 860 in FIG. 8; p. 12 lines 7-8); and (7) resuming the logical partitions suspended in step (4) (step 870 in FIG. 8; p. 12 line 8).

**GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The following single ground of rejection is presented for review on this Appeal:

1. Whether claims 9 and 23 are unpatentable under 35 U.S.C. §103(a) by Day in view of Tarui and further in view of Kaneko.

## **ARGUMENT**

**Issue 1:        Whether claims 9 and 23 are unpatentable under 35 U.S.C.  
§103(a) by Day in view of Tarui and further in view of Kaneko.**

### **Claim 9**

Claim 9 includes the limitation “at least one logical partition that owns the identified I/O resource and at least one logical partition that does not own the identified I/O resource”. In rejecting claim 9 the examiner states:

Day and Tarui do not expressly disclose the claim’s aspects of suspends/resumes **all** of the plurality of the logical partitions. However, Kaneko’s paragraph 31 discloses a storage subsystem with I/O resources being logically partitioned and assigned to different users.

Paragraph 31 of Kaneko reads:

Under this coordinated access operation over the information storing disk array units, this cluster disk subsystem is logically partitioned during the operation so that the cluster resulting from the division can be assigned to and used by different users. This logical partitioning is executed by ordering the cluster coupler 30 to separate the units by software as mentioned below.

The examiner goes on to state, “Kaneko further discloses an I/O reconfiguration mechanism including **all** of the logical partitions being suspended...”, and cites to paragraph 32.

The examiner also cites paragraph 32 of Kaneko as teaching “all of the logical partitions are suspended”. Kaneko states, “As seen in the flowcharts, the whole system is switched to a disconnection standby mode (step 31).” Appellant respectfully asserts the suspension of all the logical partitions in Kaneko does not read on the suspension of all the logical partitions in claim 9. Claim 9 recites, “suspending all of the plurality of

logical partitions...”, but the plurality of logical partitions in claim 9 comprises “at least one logical partition that owns the identified I/O resource and at least one logical partition that does not own the identified I/O resource.” Kaneko teaches that all of the logical partitions are suspended, but all of the logical partitions control the resources spoken of. Paragraph 28 states:

Therefore, according to this embodiment, each disk array unit of the cluster disk subsystem can refer to or update (hereafter, referred to as access) the resources (specifically, the cache storage devices and common storage devices) of the other disk array units that constitute the cluster.

Therefore, according to the language in Kaneko quoted above, all of the partitions have access to the resources in each of the other partitions. This means that even if all of the partitions are suspended, only the partitions that own the resources have been suspended, similar to the teaching in Tarui.

Because each logical partition in Kaneko can access the shared resources in all the other logical partitions, Kaneko must stop all the logical partitions. However, stopping all the logical partitions in Kaneko only reads on stopping logical partitions that own I/O resources. Nowhere do any of Day, Tarui or Kaneko teach or suggest suspending all logical partitions, where some of the logical partitions do not own the identified I/O resource.

In the Response to Arguments section of the pending office action, the examiner attempts to defend the rejection by stating the partition that owns the identified I/O resource is the current partition that is currently accessing the I/O resource, while other partitions that share the I/O resource but are not currently using the I/O resource do not own the I/O resource. This is inconsistent with the express teachings of Day and knowledge in the art.

In rejecting part of the preamble of claim 9, the examiner states:

Examiner note: the identified I/O input/output resource can be viewed as an I/O resource being identified for changing/reassigning per Applicant's remarks filed 12/26/2007, the plurality of logical partitions comprising at least one logical partition that owns the identified I/O resource and at least one logical partition that does not own the identified I/O resource (reassign an identified resource dynamically in a pool comprises of moving the identified resource from current logical partitions (partitions that currently accesses/owns the identified resource) to other logical partitions (partitions that currently do not access/do not own the identified resource), see paragraphs 41 and 44.

Appellant did not file a response on 12/26/2007. This is the date of an office action, not the date of a response. For this reason it is unclear to which of Appellant's remarks the examiner is referring.

It appears from the examiner's statements above the examiner equates use of a resource in a pool to ownership of that resource. This is inconsistent with the express teachings of Day and common knowledge in the art. Day shows in FIG. 3 one set of processors 316 that are dedicated to a logical partition 304 and another set of processors 315 that are shared by logical partitions 301, 302 and 303. The processors in set 316 could be said to be "owned" by logical partition 304, but the processors 315 are "owned" by all of the logical partitions 301, 302 and 303. Because the pool of processors 315 are shared by all the logical partitions 301, 302 and 303, it is incorrect to state one of these "own" the resource by virtue of simply using the resource at a given point in time. The examiner's rejection based on Tarui is inconsistent with the rejection based on Day.

Claim 9 recites:

. . . (1) the partition manager detecting a hardware state in the computer system that requires reconfiguration of the identified I/O resource; . . .



In rejecting claim 9, the examiner alleged Day teaches these limitations, stating: “the hypervisor comprises state data to enforcing [sic] the configuration/allocation of resources to partitions, paragraph 37.” The relevant portion of paragraph 37 of Day states:

Hypervisor 202 contains state data, some of which may be stored in special purpose registers while other such state data is stored in tables or other structures. Essentially, this state data defines the allocation of resources in logical partitions, and the allocation is altered by changing the state data rather than by physical reconfiguration of hardware.

Day does not teach the limitation in claim 9 quoted above because the state data in Day is not hardware state in the computer system that requires reconfiguration of the identified I/O resource. FIG. 2 of Day shows hardware and software in computer system 100 in Day. The hardware level 201 “represents the collection of physical devices (as opposed to data stored in devices), such as processors, memory, buses, I/O devices, etc., shown in FIG. 1, including other hardware not shown in FIG. 1.” Day at paragraph [0036]. The state data referenced in Day resides in the Hypervisor 202, and defines the allocation of resources in logical partitions. The examiner’s rejection of the limitation in claim 9 quoted above fails because the state data in Hypervisor 202 in Day is not “hardware state in the computer system” as recited in claim 9. While the state data in Day reflects the current allocation of resources to logical partitions, a change in the state data does not require reconfiguration of an identified I/O resource as recited in claim 1. For the many reasons given above, Day does not teach all of the limitations in clause (1) in claim 9. As a result, the examiner’s rejection of claim 9 under 35 U.S.C. §103(a) is in error.

In the rejection, the examiner admits “Day does not expressly disclose the details associating [sic] with the remaining claimed steps.” The examiner then states:

However, Tarui discloses, (2) the partition manager suspending the at least one of logical partitions by inhibiting dispatching of tasks to the at least one logical partition (Tarui’s paragraph 84, the partition control

program instructs the OS of the current partition to stop using the identified resource, By [sic] stopping the I/O tasks of the current partition, the identified resource, I/O adapter, is allowed to be disconnected from the current partition) and waiting until all pending tasks in the at least one of logical partitions are complete (Tarui's Fig 1 101, pending tasks in logical partition are flushed by the I/O adapter circuitry until it completed [sic], when no more pending I/O requests and byte counter value is zero, see paragraph 65, 67 and 84.

The examiner's reading of Tarui is incorrect. In Tarui, the partition-control program instructs the OS on the current partition to stop using the I/O adapter (step 6000). Tarui at paragraph [0084]. In claim 9, in contrast, the partition managers suspends the plurality of logical partitions by inhibiting dispatch of tasks to all of the logical partitions and waiting until all pending tasks in all of the plurality of logical partitions are complete. The examiner has shown no teaching in Tarui that reads on suspending a logical partition. The fact that a logical partition stops using an I/O adapter does not mean the logical partition is suspended. To the contrary, the logical partition may include numerous I/O adapters and other hardware resources. Stopping the logical partition from using an I/O adapter absolutely does not read on suspending a logical partition.

In addition, Tarui does not teach or suggest suspending a logical partition *by inhibiting dispatch of tasks* to the logical partition as recited in claim 9. As a result, the examiner has failed to establish a prima facie case of obviousness for claim 9 under 35 U.S.C. §103(a). In Tarui, a logical partition that owns an I/O adapter is instructed to stop using the I/O adapter by the partition control program. See paragraph [0084] and step 6000 in FIG. 6 of Tarui. There is absolutely no teaching whatsoever in Tarui of inhibiting dispatch of tasks to a logical partition. The partition control program referred to in paragraph [0084] of Tarui, after instructing the OS on the current partition to stop using the I/O adapter, could still dispatch a number of different tasks to that partition as long as the dispatched tasks do not involve the I/O adapter.

In the office action dated 12/26/2007, the examiner states on p. 5:

Tarui's paragraph 84 discloses the partition control program instructs the OS of the current partitions [sic] . . . to stop using the resources, thus obviously no more i/o tasks are issued in these current partitions (i.e [sic] corresponding to the claim's suspending logical partition and inhibit dispatch of tasks mechanism).

This position by the examiner has several fatal errors. First, instructing a logical partition to stop using one particular I/O adapter does not read on suspending a logical partition for the reasons discussed in detail above. Second, the assumption that instructing the OS of the current partition to stop using a single I/O adapter necessarily means the partition control program will not issue ANY tasks to the partition is sheer assumption and speculation by the examiner. Appellant admits the partition control program would likely not issue any I/O tasks to the logical partition for the particular I/O adapter being halted. However, the logical partition could successfully handle any non-I/O task and could also successfully handle any I/O task directed to a different I/O adapter that is not stopped. As a result, the partition control manager could dispatch tasks to the logical partition even after the instruction to the logical partition to stop a particular I/O adapter. The examiner's rejection is built upon faulty assumptions regarding Tarui.

There is a third fatal error in the examiner's position. Even if the examiner's position were supported by Tarui, that a partition control manager will not dispatch any tasks to a logical partition after instructing the logical partition to stop using an I/O adapter, this still does not read on the limitations in claim 9. In claim 9, the partition manager suspends all of the plurality of logical partitions by inhibiting dispatch of tasks to all of the logical partitions and waiting until all pending tasks in all of the plurality of logical partitions are complete. Even if the examiner could properly argue that Tarui discloses suspending a logical partition and inhibiting dispatch of tasks to that logical partition, the latter does not cause the former. In other words, the word "by" in the claim establishes a cause-effect relationship between the limitations in claim 9. The partition

manager in claim 9 has the effect of suspending all of the plurality of logical partitions. How is this done? By inhibiting dispatch of tasks to all of the plurality of logical partitions and waiting until all pending tasks in all of the plurality of logical partitions are complete. Even if Tarui could be properly construed to teach suspending a logical partition and inhibiting dispatch of tasks to that logical partition, Tarui absolutely does not teach suspending a logical partition by inhibiting dispatch of tasks to that logical partition. In Tarui, the partition control manager instructs the OS on the current partition to stop using the I/O adapter. This expressly teaches away from the cause-effect relationship expressly recited in claim 9, of suspending all of the plurality of logical partitions by inhibiting dispatch of tasks to all of the plurality of logical partitions and waiting until all pending tasks in all of the plurality of logical partitions are complete.

The examiner's rejection also uses language that is not supported in Tarui. The examiner cites Fig 1 101 of Tarui, and states "pending tasks in logical partition are flushed by the I/O adapter circuitry until it completed, when no more pending I/O requests and byte counter is zero, see paragraphs 65, 67 and 84." Appellant points out the examiner has fabricated this language out of thin air. Nowhere does Tarui include any of the following terms used by the examiner: pending tasks; flushed; and I/O adapter circuitry. The byte counters in Tarui referenced in paragraphs 65 and 67 have nothing to do with the instruction to the OS in a logical partition to stop using an I/O adapter in paragraph 87. The examiner has taken two completely unrelated teachings in Tarui and used appellant's claim as a template to piece together these teachings to allegedly find obviousness. This is a clear case of hindsight reconstruction. The fact that byte counters are used in paragraphs 65 and 67 of Tarui to send data does not mean Tarui waits until all pending tasks are complete as recited in claim 9. For the many reasons given above, Tarui does not teach all of the limitations in clause (2) in claim 9. As a result, the examiner's rejection of claim 9 under 35 U.S.C. §103(a) is in error.

In the rejection, the examiner states Tarui discloses (4) the partition manager resuming one of the plurality of logical partitions by enable [sic] dispatch of tasks to all of the plurality of logical partitions, citing paragraphs 83 and 84, and stating “after reconfiguring the identified I/O resources, naturally the system is resumed and tasks are distributed to appropriate logical partitions.” This portion of the rejection also suffers from many fatal errors. First, the examiner’s assumption that the logical partition is resumed is built upon the earlier faulty assumption that it was suspended in the first place. Thus we see the examiner’s rejection collapse under the weight of its faulty assumptions. Appellant provided detailed arguments above that explain why instructing a logical partition to stop using an I/O adapter does not read on suspending the logical partition. Because the logical partition that was instructed to stop using an I/O adapter could perform numerous other tasks not related to the I/O adapter, the logical partition is not suspended by any reasonable interpretation of that term. In addition, the examiner’s rejection of this limitation lacks the same cause-effect relationship required by the word “by” in this clause. In other words, even if Tarui can somehow be read to resume a logical partition and enable dispatch of tasks to the logical partition, Tarui does not resume all of the plurality of logical partitions by enabling dispatch of tasks to all of the plurality of logical partitions as recite in claim 9. As a result, Tarui does not teach all of the limitations in clause (4) in claim 9, so the examiner’s rejection of claim 9 under 35 U.S.C. §103(a) is in error.

For the many reasons given above, claim 9 is allowable over the combination of Day, Tarui and Kaneko, and appellant respectfully requests the examiner’s rejection of claim 9 under 35 U.S.C. §103(a) be reversed.

### Claim 23

In the rejection of claim 23, the examiner states Day teaches the limitation “(1) detecting when the I/O loop is unbalanced,” citing paragraph 47 of Day and stating “proper allocation of resource requires detecting when unbalancing happens.” Paragraph 47 of Day does not discuss balance of resources or unbalancing. In fact, neither of the words “balance” or “unbalance” exist anywhere in Day. Paragraph 47 of Day discusses the sharing of processors in a pool among logical partitions. This has nothing to do with detecting when the I/O loop is unbalanced, as recited in claim 23. Nowhere does Day teach an I/O loop. As a result, it is impossible for Day to teach detecting when the I/O loop is unbalanced as recited in claim 23.

In the Response to Arguments section of the pending office action, the examiner states:

Day clearly discloses the concept of balancing of resources, by putting resources into a pool, and resources in the pool can be divided to plurality of partitions in allocation units in a balancing manner (Day’s paragraphs 44, 47 and 48).

This statement by the examiner is a complete and total twisting of Day beyond it’s reasonable bounds. As stated above, none of the words “balance”, “balancing”, “unbalance” or “unbalancing” exists in Day. Thus, the examiner’s position that Day somehow teaches balancing of resources and dividing resources in the pool “in a balancing manner” is a clear fabrication by the examiner that is not supported by Day. Assigning resources to a pool so the resources may be shared as taught in Day has absolutely nothing to do with “(1) detecting when the I/O loop is unbalanced” as recited in claim 23. For this reason alone, the examiner’s rejection of claim 23 under 35 U.S.C. §103(a) is in error.

The examiner's rejection equates the pool of resources in Day to an I/O loop in claim 23, without any support from the teachings of Day. The pool of resources in Day is simply that: a pool of resources. To state this somehow reads on an I/O loop is a stretch of Day way beyond its reasonable bounds. Nowhere does Day teach or suggest anything that can be reasonably read on the I/O loop in claim 23. For this reason alone, the examiner's rejection of claim 23 under 35 U.S.C. §103(a) is in error.

In the rejection, the examiner states Tarui teaches:

(2) quiescent [sic] I/O resources in the I/O loop (Tarui's paragraph 84, partition program instructs the OS of the current partition to stop using the I/O resource, so that the I/O resource can be quiescent/disconnected [sic].

This rejection is in error for a number of reasons. First, halting a single I/O resource in a single logical partition as taught in Tarui does not read on quiescing I/O resources (plural) as recited in claim 23. The halting of a single resource in Tarui cannot read on quiescing multiple I/O resources. In addition, Tarui has no teaching of an I/O loop. The fact that Tarui teaches an I/O resource does not mean the I/O resource in Tarui is in an I/O loop. For these reasons, Tarui does not teach or suggest "(2) quiescing I/O resources in the I/O loop" as recited in claim 23. For this reason alone, the examiner's rejection of claim 23 under 35 U.S.C. §103(a) is in error.

In the rejection, the examiner reads Tarui on steps (3) and (4) in claim 23. The examiner's reading of Tarui on these steps is inconsistent with their express wording. According to the examiner, the current partition owns the I/O resource, and instructing the current partition to stop using the I/O resource reads on step (4). Note, however, step (4) recites suspending the logical partitions (plural) determined in step (3). The halting of a single logical partition in Tarui cannot read on suspending multiple logical partitions as expressly recited in step (4) of claim 32. For this reason alone, the examiner's rejection of claim 23 under 35 U.S.C. §103(a) is in error.

In the rejection, the examiner reads switching an I/O resource from the current partition to another partition in Tarui on (5) rebalancing the I/O loop by allocating at least one I/O resource in the I/O loop from a first logical partition to a second logical partition. While Tarui does disclose switching an I/O resource from the current partition to another partition, Tarui has no teaching of an I/O loop, and therefore cannot teach at least one resource in the I/O loop. Furthermore, Tarui does not teach or suggest rebalancing anything, much less rebalancing an I/O loop. The examiner's rejection effectively reads the limitation of I/O loop out of the claim. For this reason alone, the examiner's rejection of claim 23 under 35 U.S.C. §103(a) is in error.

In rejecting claim 23 the examiner admits Day and Tarui do not disclose the limitations relating to I/O loops and states:

However, Kaneko discloses a storage subsystem with I/O resources that are arranged including I/O physical resources (Kaneko Fig. 2: 11,12,13,14) and wherein the physical I/O resources (Fig 2, 211 to 214, 221 to 224, 231 to 234 etc array of disks and including Fig 2 11 to 14) are organized into I/O loops (Examiner note: the I/O loop can be interpreted as a group of I/O resources, and the I/O resources in the group/loop can be assigned and make [sic] available to different users/partitions (Kaneko's paragraph 31).

The examiner's assumptions above are in error. The examiner assumes that elements 11-14 of FIG. 2 of Kaneko show I/O loops 211-214, 221-224, etc. In both the rejection and in the Response to Arguments section, the examiner states "the I/O loop can be interpreted as a group of I/O resources, and the I/O resources in the group/loop can be assigned and made available to different users/partitions." Thus, with the wave of a hand, the examiner completely dismisses the limitation "I/O loop" in claim 23, even though it is recited *seven times*. This shows the examiner has not done a proper job of examining the claims in light of the cited art. Appellant forcefully asserts a group of resources as taught in Kaneko does not read on an I/O loop in claim 23. Nowhere does Kaneko teach, suggest, or show I/O loops as recited in claim 23. Nowhere do ANY of the cited references have ANYTHING to do with rebalancing an I/O loop. Nowhere does Kaneko



teach or suggest rebalancing an I/O loop with the steps recited in claim 23. The examiner's attempt to read Kaneko on claim 23 is akin to attempting to pound a square peg into a round hole: it just doesn't fit. The addition of a disk resource in Kaneko has nothing to do with detecting when an I/O loop is unbalanced, and taking the corrective action steps in claim 23 to rebalance the I/O loop. This is one of the most egregious cases of hindsight reconstruction appellant's attorney has ever seen in his nearly two decades of practice. While NONE of the cited references have ANYTHING to do with rebalancing an I/O loop, the examiner still attempts to pound the square peg into a round hole. It is immediately clear to even the casual observer that one of ordinary skill in the art would not be motivated to combine Day, Tarui and Kaneko as suggested by the examiner to arrive at all of the limitations in claim 23 without the use of appellant's claim as a template for piecing together the references. Because the examiner clearly used hindsight reconstruction in combining Day, Tarui and Kaneko, the examiner's rejection of claim 23 is in error. For the many reasons given above, claim 23 is allowable over the combination of Day, Tarui, and Kaneko, and appellant respectfully requests the examiner's rejection of claim 23 under 35 U.S.C. §103(a) be reversed.

## **CONCLUSION**

Claims 9 and 23 are addressed in this Appeal. For the numerous reasons articulated above, appellant maintains the rejections of claims 9 and 23 are erroneous.

Appellant respectfully submits that this Appeal Brief fully responds to, and successfully contravenes, every ground of rejection and respectfully requests that the final rejection be reversed and that all claims in the subject patent application be found allowable.

Respectfully submitted,

By /derekpmartin/  
Derek P. Martin  
Reg. No. 36,595

**MARTIN & ASSOCIATES, L.L.C.**  
P.O. Box 548  
Carthage, MO 64836-0548  
(417) 358-4700  
Fax (417) 358-5757

## **CLAIMS APPENDIX**

1-8 (Cancelled)

9. A computer-implemented method for reconfiguring an identified Input/Output (I/O) resource in a computer system that includes a plurality of logical partitions managed by a partition manager executing separately from the plurality of logical partitions, the plurality of logical partitions comprising at least one logical partition that owns the identified I/O resource and at least one logical partition that does not own the identified I/O resource, the method comprising the steps of:

(1) the partition manager detecting a hardware state in the computer system that requires reconfiguration of the identified I/O resource;

(2) the partition manager suspending all of the plurality of logical partitions by inhibiting dispatch of tasks to all of the plurality of logical partitions and waiting until all pending tasks in all of the plurality of logical partitions are complete;

(3) the partition manager reconfiguring the identified I/O resource; and

(4) the partition manager resuming all of the plurality of logical partitions by enabling dispatch of tasks to all of the plurality of logical partitions.

10-22 (Cancelled)

23. A computer-implemented method for rebalancing an Input/Output (I/O) loop in a computer system that includes a plurality of logical partitions managed by a partition manager executing separately from the plurality of logical partitions, the method comprising the steps of:

- (1) detecting when the I/O loop is unbalanced;
- (2) quiescing I/O resources in the I/O loop;
- (3) determining which of the plurality of logical partitions own the I/O resources in the I/O loop;
- (4) suspending the logical partitions determined in step (3);
- (5) rebalancing the I/O loop by allocating at least one I/O resource in the I/O loop from a first logical partition to a second logical partition;
- (6) enabling the I/O resources in the I/O loop after rebalancing in step (5); and
- (7) resuming the logical partitions suspended in step (4).

24. (Cancelled)

#### **EVIDENCE APPENDIX**

An Evidence Appendix is not required for this Appeal Brief.

#### **RELATED PROCEEDINGS APPENDIX**

A Related Proceedings Appendix is not required for this Appeal Brief.